AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior claim versions and listings:

1-71. (Cancelled)

72. (New) A method of fusing first and second cells, the method including:

a) Selecting at least one pair of a first and a second cell;

b) Individually positioning each pair of cells such that the respective first and second cells of each cell pair are between two electrodes in a fluid filled fusing container, each cell pair being separated from each electrode and from each other cell pair; and,

c) Applying a current having a predetermined waveform to the electrodes to generate a predetermined fusion pulse thereby causing the respective first and second cell of at least one pair of cells to fuse.

73. (New) The method according to claim 72, the cells being held in suspension between the electrodes.

74. (New) The method according to claim 72, the method including generating a DEP field, the DEP field being adapted to urge the cells towards each other.

75. (New) The method according to claim 74, the method including applying a current representing the DEP field to a pair of second electrodes.

76. (New) The method according to claim 74, the method including:

d) Applying a DEP current to the pair of second electrodes;

e) Positioning the first cell in the fusing container, the alternating field acting to attract the first cell towards one of the second pair of electrodes; and,

f) Positioning the second cell in the fusing container, the alternating field acting to attract the second cell towards the first cell.

77. (New) The method according to claim 76, at least one of the first and second cells being positioned in contact with at least one of the second pair of electrodes.

78. (New) The method according to claim 72, the method including:

a) Selecting the first and second cells using a pipette;

b) Using the pipette to position the first cell in the fusing container;

c) Using the pipette to position the second cell in the fusing container, adjacent the first cell; and,

d) Positioning the electrodes such that the first and second cells are located substantially between the electrodes.

79. (New) The method according to claim 78, the method of using the pipette to position the second cell adjacent the first cell including causing the controller to:

a) Move the pipette such that the port is adjacent the first cell in the fusing container;

b) Cause the pipette to expel fluid through the port, thereby expelling the second into the fluid in the fusing container;

c) Move the pipette such that the port is as close as possible to both the first and second cells;

d) Cause the pipette to draw in fluid through the port, thereby drawing in the first and second cells and the surrounding fluid;

e) Cause the pipette to expelling the first and second cells into the fluid in the fusing container; and,

f) Repeat steps (c) to (e) until the first and second cells are within a predetermined distance.

80. (New) The method according to claim 72, the electrodes being coupled to an electrode drive system adapted to move the electrodes with respect to the fusing containers, the method including using a controller coupled to the electrode drive system to position the electrodes in the fusing chamber.

81. (New) The method according to claim 72, the electrodes being coupled to a signal generator, the method of applying the current to the electrodes including causing the signal generator to apply a predetermined current to the electrodes.

82. (New) The method according to claim 81, the first and second cells having a respective cell type, the method including using a controller coupled to a signal generator to select the current in accordance with the cell types of the first and second cells.

83. (New) An apparatus for fusing first and second cells, the apparatus including:

a) A fluid filled fusing container;

b) At least two electrodes adapted to be positioned in the fusing container in use;

c) A selector for:

1. Selecting a first cell from a group of first cells held in a respective container; and,
2. Selecting a second cell from a group of second cells held in a respective container;
3. Individually positioning the respective first and second cells in the fusing container between the electrodes, so that the cell pair is separated from each electrode and each other pair of cells ; and,

d) A signal generator coupled to the electrodes, the signal generator being adapted to cause a field having a predetermined waveform to be generated between the electrodes, thereby causing the respective first and second cells of at least one pair of cells to fuse .

84. (New) The apparatus according to claim 83, the selector being a pipette.

85. (New) The apparatus according to claim 84, the apparatus further including:

a) A drive system adapted to move the pipette with respect to the first, second and fusing containers; and,

b) An actuator adapted to cause the pipette to expel or draw in fluid through a port.

86. (New) The Apparatus according to claim 83, the electrodes being coupled to the fusing container.

87. (New) The apparatus according to claim 83, the apparatus further including an electrode drive system adapted to move the electrodes with respect to the fusing containers.

88. (New) The apparatus according to claim 83, the current waveform including:

a) a fusion pulse, the signal generator being adapted to apply the fusion pulse to the electrodes to generate an electric field pulse thereby causing the cells to fuse; and

b) a DEP current, the signal generator being adapted to apply the DEP current to the electrodes to generate a DEP field thereby urging the cells towards each other.

89. (New) The apparatus according to claim 83, the apparatus including a pair of second electrodes, the pair of second electrodes being coupled to a second signal generator, the second signal generator being adapted to generate a DEP current, the DEP current being applied to the pair of second electrodes to generate a DEP field thereby urging the cells towards each other.

90. (New) The apparatus according to claim 89, the pair of second electrodes being provided on the fusing container surface.

91. (New) The apparatus according to claim 84, the apparatus further including a controller adapted to control the fusing of the cells by controlling operation of at least one of:

a) The pipette;

b) The electrodes; and,

c) The signal generator.

92. (New) The apparatus according to claim 91, the controller including a processor coupled to at least one of:

a) The drive system and the actuator, the processor being adapted to move and actuate the pipette;

b) The electrode drive system, the processor being adapted to move the electrodes; and,

c) The signal generator, the processor being adapted to cause the signal generator to generate an electrical current having the predetermined waveform.

93. (New) The apparatus according to claim 92, the controller including a detector adapted to detect the position of cells within the containers, the processor being responsive to the detector to move at least one of the electrodes and the pipette in response to the position of detected cells.

94. (New) The apparatus according to claim 92, the processor being coupled to a store for storing waveform data representing a number of different predetermined waveforms, the processor being adapted to select one of the number of predetermined waveforms in response to the input commands received from a user.

95. (New) A controller for controlling apparatus for fusing first and second cells, the apparatus including:

a) A fluid filled fusing container;
b) At least two electrodes;
c) A selector;
d) A signal generator coupled to the electrodes;

Wherein, in use, the controller is adapted to cause the cells to fuse by:

i) Causing the selector to:
   (1) Select a first cell from a group of first cells held in a respective container; and,
   (2) Select a second cell from a group of second cells held in a respective container; and,
   (3) Individually position the respective first and second cells in the fusing container between the electrodes, the first and second cells being held in suspension, so that the cell pair is being separated from each electrode and each other pair of cells; and,
ii) Causing the signal generator apply a field having a predetermined waveform to the electrodes, thereby causing the respective first and second cells of at least one pair of cells to fuse.

96. (New) The controller according to claim 95, the controller being further adapted to position the electrodes in the fusing container.

97. (New) The controller according to claim 96, the controller including processor coupled to at least one of:

a) A drive system adapted to move a pipette with respect to the first, second and fusing containers;
b) An actuator adapted to cause a pipette to expel or draw in fluid through a port;
c) An electrode drive system adapted to move the electrodes with respect to the fusing containers; and,
d) The signal generator.

98. (New) The controller according to claim 97, the controller including a detector adapted to detect the position of cells within the containers, the processor being responsive to the detector to move at least one of the electrodes and the pipette in response to the position of detected cells.

99. (New) The controller according to claim 97, the processor being coupled to a store for storing waveform data representing a number of different predetermined waveforms, the processor being adapted to select one of the number of predetermined waveforms in response to the input commands received from the user.

100. (New) The controller according to claim 97, the processor being adapted to move at least one of the electrodes and the pipette in response to the input commands received from a user.

101. (New) The controller according to claim 95, the current waveform including at least one of:

a) a fusion pulse, the controller being adapted to cause the signal generator to apply the fusion pulse to the electrodes to generate an electric field pulse thereby causing the cells to fuse; and
b) a DEP current, the controller being adapted to cause the signal generator to apply the DEP current to the electrodes to generate a DEP field thereby urging the cells towards each other.

102. (New) The controller according to any one of the claim 95, the apparatus including a pair of second electrodes, the pair of second electrodes being coupled to a second signal generator, the

controller being adapted to cause the second signal generator to generate a DEP current, the DEP current being applied to the pair of second electrodes to generate a DEP field thereby urging the cells towards each other.

103. (New) The controller according to claim 95, the controller being adapted for use with apparatus including:

a) A fluid filled fusing container;
b) At least two electrodes adapted to be positioned in the fusing container in use;
c) A selector for:
    i. Selecting a first cell from a group of first cells held in a respective container; and,
    ii. Selecting a second cell from a group of second cells held in a respective container;
    iii. Individually positioning the respective first and second cells in the fusing container between the electrodes, so that the cell pair is separated from each electrode and each other pair of cells ; and,
d) A signal generator coupled to the electrodes, the signal generator being adapted to cause a field having a predetermined waveform to be generated between the electrodes, thereby causing the respective first and second cells of at least one pair of cells to fuse .

104. (New) A pipette system for manipulating particles, the pipette system including:

a) A nozzle for containing fluid in use, the nozzle including a port;
b) An actuator coupled to the nozzle, the actuator being adapted to draw in and/or expel fluid through the port; and,
c) An electrode coupled to the nozzle adjacent to the port, the electrode being adapted to cooperate with a second electrode to allow an electric field to be applied to coupled to one or more particles positioned adjacent to the port.

105. (New) The pipette system according to claim 104, the electrode being formed a conductive tube.

106. (New) The pipette system according to claim 105, the electrode being formed from a stainless steel tube having a diameter of approximately 10mm.

107. (New) The pipette system according to claim 104, the pipette system including a drive system adapted to move the pipette system to be with respect to a fluid filled container to thereby allow particles to be positioned in or removed from fluid in the container.

108. (New) The pipette system according to claim 107, the pipette system including a signal generator coupled to the electrode for generating a predetermined electric field between the electrode and a second electrode positioned in the container.

109. (New) The pipette system according to claim 108, the pipette system including a controller adapted to control the drive system, the actuator and the signal generator to thereby apply an electric field to a particle by:

a) Positioning the particle in the container adjacent the second electrode using the pipette;
b) Positioning the pipette port adjacent the particle in the container; and,
c) Activating the signal generator.

110. (New) The pipette system according to claim 109, the controller being adapted to fuse cells, by:

a) Positioning a first cell in the container adjacent the second electrode using the pipette;
b) Positioning a second cell in the container adjacent the first cell using the pipette;
c) Positioning the pipette port adjacent the first and second cells, such that first and second cells are substantially between the electrodes; and,
d) Activating the signal generator to cause a predetermined field sequence to be applied to the cells, thereby causing the cells to fuse.

111. (New) The pipette system according to claim 110, the pipette system further including:

a) A radiation source; and,

b) waveguide having a first end coupled to the radiation source and a second end coupled to the nozzle adjacent the port to thereby allow radiation from the radiation source to impinge on particles positioned adjacent to the port in use.

112. (New) The pipette system according to claim 111, the pipette system including a detector, the detector being adapted to detect radiation emitted by the particle.

113. (New) The pipette system according to claim 112, the detector being coupled to the first end of the waveguide, to thereby detect radiation emitted from the particle.

114. (New) The pipette system according to claim 111, the radiation source being a laser.

115. (New) The pipette system according to claim 111, the waveguide being a fibre optic cable.

116. (New) The pipette system according to claim 111, the waveguide being formed from the nozzle, the nozzle including a shaped portion to allow the radiation from the radiation source to enter the nozzle and pass along at least a portion of the nozzle, the radiation being emitted from the nozzle through the port.

117. (New) The pipette system according to claim 111, the pipette system including a controller adapted to perform at least one of:

a) activating the actuator to thereby cause fluid to be drawn in and/or expelled through the port; and,
b) Activating the radiation source, to thereby expose a particle to radiation.

118. (New) The pipette system according to claim 117, the drive system being coupled to a controller, the controller being adapted to recover particles having predetermined properties from the container by:

a) Positioning the pipette system such that the port is adjacent to a particle;
b) Activating the radiation source to thereby expose the particle to radiation;
c) Detect any radiation emitted by the particle;

d) Determine if the particle has the predetermined properties in accordance with the detected radiation; and,

e) In accordance with a successful comparison, activate the actuator to thereby draw fluid into the nozzle through the port, thereby recovering the particle.

119. (New) The pipette system according to claim 118, the actuator including:

a) A fluid reservoir;

b) A flexible tube coupling the nozzle to the fluid reservoir;

c) An arm positioned so as to partially compress the tube;

d) An actuator drive system adapted to move the arm so as to perform at least one of:

i. Further compressing the tube to thereby expel fluid from the port; and,

ii. Decompressing the tube to thereby draw fluid in through the port.

120. (New) The pipette system according to claim 119, the actuator drive system including:

a) A first actuator drive for moving the arm with respect to the tube and/or a bladder; and,

b) A second actuator drive formed from an arm end portion, the arm end portion being in contact with the tube in use, the second actuator drive being adapted to cause the arm end portion to expand or contract.

121. (New) The pipette system according to claim 119, the pipette system including a controller coupled to the actuator drive system, the controller being adapted to operate the actuator drive system to thereby draw fluid in or expel fluid through the port.

122. (New) The pipette system according to claim 121, the drive system being coupled to the controller, the controller being adapted to recover particles from the fluid by:

a) Positioning the pipette system such that the port is adjacent to a particle; and,

b) Activate the actuator drive system to thereby draw fluid into the nozzle through the port, thereby recovering the particle.

123. (New) The pipette system according to claim 119, the tube being formed from silicon tubing.